The memorandum which we print below briefly sets forth the proposal as now submitted to the Executive Committee of the Fisheries Exhibition. It has been signed by the following naturalists:—Sir John Lubbock, Mr. P. L. Sclater, Prof. Jeffrey Bell, Prof. Michael Foster, Prof. Burdon Sanderson, Prof. Flower, Prof. Allman, Prof. Richard Owen, Dr. G. J. Romanes, Prof. Lankester, Prof. Moseley, Dr. Carpenter, Mr. John Murray, Mr. Thiselton Dyer, Prof. Milnes Marshall, and Mr. Adam Sedgwick. The absence of the names of one or two influential zoologists from this list is explained by their official connection with the Exhibition, which has rendered it undesirable to ask them to commit themselves in reference to a question in the consideration of which they will ultimately have the greatest responsibility and weight.

The memorandum runs as follows:—

Proposal for the Foundation of an Observatory on the British Coast for the Study of Marine Animals and Plants in relation to Fish and Fisheries.

The value to the fish industry of an increased knowledge of the habits and life-history of fishes has been proved by the experience of the American and French Commissions. Without such knowledge we cannot improve our fisheries commercially; with it, there is every probability that a great deal may be done in the way of controlling and extending them. In order to gain accurate knowledge as to the circumstances which affect the life of fishes, and the various mollusks, shell-fishes, corals, and sponges, which are important commercially as well as interesting from the scientific point of view, it is necessary that continuous observations should be made upon their growth from the egg onwards, upon their food and its natural history, as well as upon their enemies and the conditions favouring, or injurious to, their life. Such observations can only be successfully carried out by persons resident on the sea-coast. In order to enable competent observers to spend such time as they can afford for these studies to the greatest advantage, zoological observatories have been established on the sea-coast of foreign countries, but at present there is no such observatory on the British coast. The first observatory of the kind is the "zoological station" established by Dr. Dohrn at Naples, which is frequented by naturalists from all parts of Europe. Its buildings and aquaria represent an expenditure of 20,000*l.*, and its annual expenditure is over 4000*l.* Similar observatories have been established by the Austrian Government at Trieste, and by the French Government at Concarneau, Roscoff, and Villefranche. It has been for some years the desire of English naturalists to establish a zoological observatory on the British coast, which would be in charge of a competent resident superintendent, and fitted with aquaria, laboratories, and apparatus, and possessed of boats and dredging apparatus. Two or three fishermen would be kept in the pay of the observatory. The institution thus organised would be frequented at all times of the year by naturalists desirous of carrying on original investigations relative to the life-history and structure of marine organisms. Accommodation for as many as six such naturalists might be provided. The affairs of the observatory and the granting of permission to make use of its appliances might be intrusted to a small committee, consisting (for example) in the first place of the Warden of the Fishmongers' Company, the professors of zoology, botany, and physiology in the universities of Great Britain, and in the London colleges, and the secretaries of the Linnæan and Zoological Societies of London. Were such an observatory once established, there is every reason to believe that funds could be raised annually for the purpose of extending its operations, and of carrying on special work in it by grants from scientific societies, the universities, and such sources. The obstacle hitherto to the establishment of a British zoological observatory has been the difficulty of obtaining the large sum necessary to launch the institution. It is calculated that 8,000*l.* would be sufficient to secure a site and erect and furnish a suitable building—whilst 500*l.* a year should be secured as a minimum income for the purpose of paying a salary of 250*l.* a year to a resident superintendent, minor salaries to fishermen and attendants, and of meeting the small current expenses. The income of the institution might be materially aided by the payment of a fee (say 5*l.* a month) on the part of those naturalists making use of its resources. The opportunity for securing the 20,000*l.* necessary for the inauguration of such a zoological observatory has presented itself in connection with the International Fisheries Exhibition. Should there be, as there is reason to hope, a large surplus fund in the hands of the Committee of the Exhibition at its close, it is proposed to bring the suggestion of the establishment of a Marine Zoological Observatory before the Committee, and to endeavour to obtain the support of that body for the scheme. It is proposed that a deputation of scientific men should interview the committee of the Fisheries Exhibition, in order to explain the importance of a marine observatory and the close relationship of the work done in such an institution to the interests of our fisheries; and the Committee would then be asked to consider the propriety of handing over the sum of 20,000*l.* (or if possible a larger sum, this being a minimum) to trustees, for the purpose of building and endowing such an observatory, provision being made as to the future government and occupation of the observatory, as above suggested.

NOTES

At the opening of the London Hospital Medical School, Prof. Huxley gave an address on the relations of the State to the medical profession. He considers the present relations on the whole satisfactory, and that it is not desirable that the State should do more than it does to protect the public against incompetent persons and quacks. He thinks that no license should be granted except for the three qualifications, and that the course of study should be extended somewhat backwards, by insisting, instead of the general education test, upon some knowledge of elementary physics, chemistry, and so forth, by the young man desirous of entering upon a course of medical studies. In conclusion, he referred to the want of organisation for the advancement of the science of medicine considered as a pure science.

Prof. Michael Foster gave the introductory address at the School of Pharmacy last week; the subject was "Cramming," and the address will be found reported in full in the *Pharmaceutical Journal* of October 6.

The remains of William Harvey are about to be removed to a new sarcophagus in Hemel Hempstead Church.

An amusing incident is related in our contemporary *L'Électricien*, showing that the knowledge of electrical terminology is yet far from perfect amongst patrons of the latest applications of the science. One of the most eminent and old-established firms who supply incandescent lamps had lately fulfilled an order for a certain number of lamps, specified to be of twenty candle-power at forty-five volts. They received, three days after despatching the goods, the following memorandum:—"We have received your lamps as per invoice, together with the supports, but we were unable to find amongst the goods consigned the forty-five volts invoiced with the lamps . . . "!

As the papers often refer to Chinese telegrams sent to and from Europe in connection with the Franco-Chinese negotiations, it may not be useless to state that a special code of telegraphy has been devised for the use of the Chinese. All the characters of the Chinese language have been numbered, and these numbers are sent by telegraph as secret messages. On arriving in China they are translated into Chinese numbers for the use of Chinese officials.

In carrying out an Act passed by Congress, President Arthur has invited the various countries to send representatives to an International Conference at Washington, the date of which is unfixed, to establish a common prime meridian. The Governments of Austria, Norway, and Sweden have declined, but the two latter approve of the object. Spain is favourable, but has deferred its reply. Belgium is uncertain, but Denmark and Portugal have accepted the invitation conditionally. Switzerland, Venezuela, Mexico, Turkey, Greece, China, Japan, Hawaii, Hayti, Liberia, Holland, Canada, Guatemala, Roumania, Nicaragua, and Honduras have accepted. Replies are expected from Italy, Great Britain, Russia, France, Chili, Brazil, and Germany.

UNIVERSITY COLLEGE, DUNDEE, the munificent gift of Miss Baxter, was duly "inaugurated" on Friday, Prof. Stewart of Cambridge giving an able address on higher education. The college starts with a clear endowment of 100,000*l.*, and a well-selected staff of professors.

THE Photographic Society's Exhibition has been opened at the rooms of the Royal Society of Painters in Water Colours.

WE notice in the *Izvestia* of the Russian Geographical Society an interesting paper by Dr. Woeikof, on the velocity of the wind in Russia. In addition to the important works of MM. Hann and Koeppen, Dr. Woeikof has calculated for fifty Russian and Siberian stations the ratio between the velocity of the wind at 1 p.m. and that in the morning and evening. These calculations have been made in order to show the increase of the force of the wind towards midday and to verify Herr Koeppen's hypothesis as to the dependency of this increase upon the differences of velocities of air in its upper and lower strata, which strata are mixed together by the ascending currents occasioned by the heating of the surface of the soil. The Russian and Siberian stations displaying a great variety of local conditions, M. Woeikof points out the influence of these conditions, but arrives, in their broad features, at the following conclusions:—Throughout Northern and Middle Russia, where the heating of the surface of the soil is very small during the winter, and the ascending current is feeble, the force of the wind increases but slowly as the sun rises above the horizon. The increase is much more during the spring and summer, and at some places the wind at midday blows with a force on an average nearly double what it was in the morning and will be in the evening. In Southern and South-Eastern Russia the increase of the force of the wind during the day is felt even in the winter, owing to the greater heating of the steppes in these lower latitudes. In the Ural region the same increase becomes obvious after February, and the ratio between the forces of the wind at 1 p.m. and at 7 a.m. and 9 p.m. becomes more than 2 to 1 in the summer. In Siberia and Mongolia the relations become more complicated on account of the anticyclones, but the same explanation of the phenomena holds good if the local circumstances be taken into account.

IN his recent work on "Jade and Nephrite Articles in the Dresden Museum," Dr. A. B. Meyer expressed the opinion that there must be other sources of the raw material than those of raw nephrite found in North Germany, Turkestan, New Zealand, and New Caledonia, and of raw jade in Burmah and Montevideo, in order to account for the diffusion of articles wrought from these materials. This view has been so far confirmed that four pieces of raw nephrite of the specific weight of 3·01 have since been found in Suckow, Uckermark, a boulder of the same material in Steiermark, and raw jade in large masses, generally in the form of boulders, in Alaska. He further was of opinion that China could not draw all its nephrite from Turkestan. It had already been shown that the large masses of raw material transported by sea from Burmah to China consisted of jade with the specific weight of nephrite, and Dr. Meyer remarked that by far the largest number of Chinese articles seemed to be of nephrite. Out of the stone hatchets, as they were thought to be, brought by Mr. Anderson from Yunnan, there were but three which had the specific weight of nephrite, and Dr. Meyer conjectured that they were of jade. A piece of the only "indubitable" hatchet out of the three, having been forwarded by Mr. Anderson to Dr. Meyer, was on examination found to be genuine nephrite. The fact is therefore established that genuine nephrite as well as jade exists in the region of Further India, though their exact locality has yet to be discovered.

MESSRS. CROSBY LOCKWOOD AND CO. announce the following new and forthcoming publications:—"British Mining; a Practical Treatise on the Metalliferous Mines and Minerals of the United Kingdom, dealing comprehensively with the theories of Mineral Deposits, the History of Mines, their Practical Working, and the Future Prospects of British Mining Industry," fully illustrated, by Robert Hunt, F.R.S., late Keeper of Mining Records, editor of Ure's "Dictionary of Arts, Manufactures, and Mines, author of "Researches on Light," &c., formerly Professor of Physics, Royal School of Mines; "Earthy and other Minerals and Mining," with numerous illustrations, by D. C. Davies, F.G.S., Mining Engineer, &c., uniform with and forming a companion volume to the same author's "Metalliferous Minerals and Mining"; "Graphic and Analytic Statics in Theory and Comparison, their Practical Application to the Treatment of Stresses in Roofs, Solid Girders, Lattice, Bowstring and Suspension Bridges, Braced Iron Arches and Piers, and other Frameworks, to which is added a chapter on Wind Pressures," by R. Hudson Graham, C.E., containing diagrams and plates to scale, with numerous examples, many taken from existing structures; "A Handbook of the Art of Soap-making, including the Manufacture of Hard and Soft Soaps, Toilet Soaps, Medicated and Special Soaps, Bleaching and Purifying Oils and Fats, Recovery of Glycerine, &c., &c.," with a series of engravings, by Alexander Watt, author of "Electro-Metallurgy Practically Treated," &c.; "The Engineers' and Shipowners' Coal Tables," by Nelson Foley, author of "The Engineer's Office Book of Boiler Construction."

MESSRS. SIEMENS AND HALSKE have brought out an instrument called a torsion galvanometer to be used for large currents. It consists of a magnet suspended between two coils, so as to be affected by both, but to which is attached a torsion spring so arranged that the amount of torsion necessary to bring the needle back to its normal position can easily be determined. These instruments are made in two forms, a vertical and a horizontal form. In the vertical form the needle is suspended by a cocoon silk, and the reading is taken from above; this is the more delicate form. In the horizontal form, which is meant for more practical work, the needle is balanced on knife-edges, and carries at one end a light pointer which passes behind a scale. The amount of torsion required to bring the needle back to zero is indicated by another pointer attached to a handle, and which moves in front of the scale. These instruments can be used either in main circuit or shunt; in the latter case they are often used in conjunction with a resistance box so arranged as to reduce the fall of potential between the terminals of the instrument in a known ratio. It is necessary, however, to use a table of calibrations which are subject to very little change with time.

A COURSE of elementary lectures upon Recent Astronomy and Sidereal Astronomy will be delivered in Gresham College, at six o'clock p.m. on October 16, 17, 18, and 19, by the Rev. Edmund Ledger.

THE President of the Aristotelian Society, Mr. Shadworth H. Hodgson, M.A., LL.D., will open the ensuing session with an address, on Monday evening, October 15, 1883, and the society will then meet fortnightly as usual. The chief work of the session will be a study of Berkeley's "New Theory of Vision" and "Principles of Human Knowledge," and Hume's "Treatise of Human Nature."

THE recent *soirée* of the Chester Society of Natural Science was marked by the publication of a useful programme or descriptive catalogue, which gave to the objects exhibited a teaching value, which may be well imitated, and which forms a permanent reference to those who had the opportunity of being present. The sixty microscopes shown were classified, according to the subject under the lens, into groups, exemplifying the intimate structure of each of the classes into which animals and plants have been divided, the chief points of structure being briefly described under each head in the "programme," which thus formed a biological text-book of twenty pages with real objects for illustration. This society, founded by Canon Kingsley, is doing exceedingly good work in limiting its operations to the natural history and geology of its own district, scrupulously defined on an ordnance map. The study of local biology is encouraged by the annual grant of 10*l.*, known as the Kingsley Memorial Prize, open to any resident within the Society's district; that of next year is offered for the best collection of "Slides of the Freshwater Algæ of the Society's District, omitting the Diatoms." The Kingsley Memorial Medal this year was awarded to Mr. Shrubsole, F.G.S.

THE report on the progress and condition of the Botanic Garden and Government Plantations in South Australia for 1882, by the Director, Dr. Schomburgk, contains the usual amount of information on the introduction and cultivation of useful and ornamental plants. Dr. Schomburgk draws attention to the small rainfall for the year. He says that during 1881 it amounted to 18·192 inches, but during 1882 it only amounted to 15·742 inches, which was 5·469 inches below the general average (21 inches odd) of the previous forty-three years, the only years during which the rainfall was less than that of last year. During May and June severe frosts prevailed. The temperature was on several nights as low as 29° and 30°. These frosts had, of course, a disastrous effect upon plants in the gardens. "The tropical and subtropical trees and shrubs which had scarcely recovered from the frosts of 1881, especially the tropical *Ficus*, constituted the chief bulk of the sufferers; they have suffered materially, and they have been sadly reduced—from 30 feet and 40 feet in height, to 6 feet and 10 feet." As early as the latter end of September some very hot days were experienced, the thermometer showing 96° in the shade, and 120° in the sun, the highest temperature experienced in any former September. During December and January three slight showers of rain alone fell. Notwithstanding these checks to vegetation a considerable amount of work seems to have been done of a varied character. In the matter of useful plants we quote the following paragraph as an example:—"The demand by invalids for medical herbs becomes more frequent, and it is gratifying to be able to supply them. Inquiries are especially made for the following, viz.: the common English broom (*Cytisus scoparius*), of which a decoction is used in dropsy; the leaves of the mullein or shepherd's club (*Verbascum thapsus*), a decoction of the leaves being recommended by some of the American papers as a remedy against consumption; the globular sponge (*Euphorbia pilulifera*), a native of the tropical regions of the New and Old World. It is found growing in Queensland, and a decoction of the plant is said to be used with the best results in asthmatic complaints."

MR. F. S. MOSELEY, F.Z.S., writes to the *Times* to state that a Marmoset (*Hapale jacchus*) in his possession gave birth to two young ones on the 4th inst.; Mr. Moseley supposes this to be the first case of the kind in Europe.

A TELEGRAM received at Paris on Tuesday night from Algiers states that a strong shock of earthquake was felt at Philippeville at half-past one o'clock that morning. The oscillation was in the direction from north to south. At Jammasses the church and barrack walls were cracked; at Stora a house was also damaged.

A CORRESPONDENT residing at Accra, West Coast of Africa, sends some particulars of the recent earthquake at that place:—"It was at 2.30 a.m. on the morning of Sunday, August 12, that several shocks of earthquake were experienced. The evening previous had been cool, with alternate periods of thick, hot air, which rather presaged a thunderstorm, it being the season of the year when tornadoes pass over the coast. On the night in question it was observed that the surf was particularly violent until half an hour prior to the first shock, when the water seemed to subside and become comparatively calm. The first shock was followed by a second and more violent shock, shaking the foundations. In each case the shock was preceded by an explosion resembling in a great degree the sound usually caused by the discharge of a gun from ships lying in the roadstead. Christiansborg Castle, which in 1863 was wrecked by an earthquake at the same time of year, felt the force of the disturbance severely. Several of the castle walls and those of the neighbouring European houses were found to be cracked the next day. The critical phase lasted, as far as could be calculated, from thirty to forty seconds. During the period—2.30 a.m. to 3.30 a.m.—there was a variation of temperature of 3°—viz. from 71° to 74°, and *vice versâ*. In this interval the wind had completely died away, the atmosphere being hot and almost stifling. It was very difficult to trace the direction of the earthquake, but my own opinion is that it travelled from the south-west, and this is somewhat confirmed by the reports since received from that quarter. Small shocks were repeated at intervals of one hour till seven o'clock in the morning, and on two days since the 12th slight tremors have been felt, but not of sufficient power to do much damage. Since the event the weather has become remarkably cool, considering our proximity to the Equator, the average temperatures being, night and morning, 72°, sun 97°, shade 56°."

THE additions to the Zoological Society's Gardens during the past week include a Bubaline Antelope (*Alcelaphus bubalis* ♀), a Domestic Goat (*Capra hircus*) from Algeria, presented by Mr. Robert Pitcairn; a Black Hornbill (*Buceros atratus*) from West Africa, presented by Mr. J. T. Carrington; two Grey Monitors (*Varanus griseus*) from Arabia, presented by Capt. J. S. Sanderson; four Ural Phrynocephales (*Phrynocephalus helioscopus*) from the east coast of the Caspian, presented by Dr. A. Strauch, F.M.Z.S.; twelve European Tree Frogs (*Hyla arborea*), European, presented by Mr. Carl Schorlemmer; a Cape Hyrax (*Hyrax capensis*) from South Africa, a Great Bustard (*Otis tarda*), European, deposited; an Ocelot (*Felis pardalis*), a King Vulture (*Gypagus papa*), a Brazilian Caracara (*Polyborus brasiliensis*), an Anaconda (*Eunectes murinus*), a Common Boa (*Boa constrictor*) from Brazil, purchased; two Mandarin Ducks (*Æx galericulata*), two Cockateels (*Calopsitta novæ-hollandiæ*), bred in the Gardens.

GEOGRAPHICAL NOTES

A LETTER from Mr. H. M. Stanley, dated July 14 has been published in New York, in which he reports the discovery of a new lake called Mantumba. He has also explored the river marked in the maps as the Ikelembu, but which is really the Malundu, and finds it to be a deep, broad, navigable stream. Stanley expresses his increasing surprise at the density of the population in the equatorial portions of the Congo basin, and says if what he has seen may be taken as representing the state of things generally, there is a population in this river basin of forty-nine millions. Extensive commercial openings are offering themselves.

A TELEGRAM from New York, October 9, states that exploring parties who had just descended the Yukon River, in Alaska, say that they travelled down the stream for two thousand miles. They report the river to be one of the largest in the world, discharging 50 per cent. more water than the Mississippi. Its breadth in some places is seven miles.

THE Austrian African explorer, Dr. Stecker, after five years' absence in the service of the German African Society, has just returned home. For the most part he travelled in company with Herr Gerhard Rohlfs, but Stecker has himself discovered about a dozen countries east and south of Abyssinia, which